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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,564	10/27/2003	Gang Luo	11284 (NCR.0117US)	2425

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EXAMINER	
STACE, BRENT S	

ART UNIT	PAPER NUMBER
2161	

DATE MAILED: 10/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/694,564	LUO ET AL.	
	Examiner	Art Unit	
	Brent S. Stace	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,14-20,22-26 and 28-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,14-20,22-26 and 28-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. This communication is responsive to the amendment filed July 24th, 2006. Claims 1-12, 14-20, 22-26, and 28-30 are pending. In the amendment filed July 24th, 2006, Claims 1, 4-8, 14, 22, and 24-26 are amended, Claims 13, 21, and 27 are canceled, and Claims 1, 14, and 22 are independent. The examiner acknowledges that no new matter was introduced and the claims are supported by the specification. This action is FINAL.

Response to Arguments

2. The Applicant's arguments filed July 24th, 2006 with respect to Claims 1-12, 14-20, 22-26, and 28-30 have been considered but are not persuasive.

3. The scope of Claims 1, 14, and 22 has substantially changed to a scope not previously presented. As such, new rejections may have been applied from Claims 1-12, 14-20, 22-26, and 28-30.

4. As to the applicant's arguments with respect to Claims 1 and 22 for the prior art(s) allegedly not teaching anything "to do with the subject matter recited in claim 1, namely identifying transactions that operate on the same set of one or more tuples, and re-allocating transactions between or among session with the database system such that the identified transactions that operate on the same set of one or more tuples is allocated to one of the sessions," the examiner respectfully disagrees. From the

applicants arguments it appears that the applicant does not understand how the references were and are combined. MathLeague, pg. 7, Simplification by Multiplication example with Walter, pg. 168, paragraph under C) with Gu, col. 1, lines 25-37 with Gu, col. 1, lines 49-67 were used in combination to rejection the argued subject matter. As mapped, the transactions of Walter are the sessions in the claim. Also, MathLeague, in the cited section, multiplies both sides of an equation by 12 to simplify the equation and solve for the variable. As this prior art is combined with the other arts, the multiplication of 12 on the left hand side of the equation is one transaction while the multiplication of 12 on the right hand side is a second transaction. These transactions are grouped together in Walter as being in the same commit scope so both sides would be modified on commit (to maintain the equivalence in the equation), thus solving/simplifying transactions like the cited transaction of Gu. With this in mind, the "identifying transactions that operate on the same set of one or more tuples" limitation is seen as identifying transactions that operation on the same equation (including variables and numbers (set of one or more tuples)). Additionally, "re-allocating transactions between or among the sessions such that the identified transactions that operate on the same set of one or more tuples are allocated to one of the sessions" is seen as combining the sequence of transactions into a single atomic statement (like I Gu, col. 1, lines 25-37). Since the equivalence in the equation must be upheld, transactions in Walter, and MathLeague must be moved like in Gu so they can be committed in a single atomic statement.

5. As to the applicant's arguments with respect to Claims 1 and 22 that there is allegedly no motivation or suggestion to combine the references (Gu, Walter, and MathLeague), the examiner respectfully disagrees. Gu contains a motivation in that INSERT and UPDATE operations are modification operations, must like the operations done in MathLeague. Additionally, Gu teaches the requirement of issuing atomic statements, which is much like the commitment of transactions in Walter. The advantages of combining the references as stated can be found below in the reasoning to combine the references directly after the rejected Claim 1.

6. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

7. As to the applicant's arguments with respect to Claim 14 for the prior art(s) allegedly not teaching anything "to do with identifying statements that operate on a set of one or more tuples for the purpose of combining the identified statements into a single statement that specifies a modification operation on a value c that is an aggregation of values of modification operations in the identified statements," the examiner respectfully disagrees. From the applicants arguments it appears that the

applicant does not understand how the references were and are combined. The similar argument with respect to Claim 1 (and 22) are incorporated into this argument and should be sufficient to show examiner response to this argument with regard to the limitation of "identifying statements that operate on a set of one or more tuples for the purpose of combining the identified statements into a single statement that specifies a modification operation." With this in mind, the "on a value c that is an aggregation of values of modification operations in the identified statements" limitation is seen as, essentially, MathLeague's "x" in the example. Since x is made up from different numbers (values), that of which need to be aggregated (added/mulitplied) (modification operations) to solve for x, this appears to teach the claimed limitation as claimed.

8. As to the applicant's arguments with respect to Claim 14 that there is allegedly no motivation or suggestion to combine the references (Gu and MathGoodies), the examiner respectfully disagrees. However, this argument is moot since the rejection uses a different set of prior art.

9. The other claims argued merely because of a dependency on a previously argued claim(s) in the arguments presented to the examiner, filed July 24th, 2006, are moot in view of the examiner's interpretation of the claims and art and are still considered rejected based on their respective rejections from the first Office action (parts of recited again below).

Response to Amendment

Information Disclosure Statement

10. The information disclosure statement is being considered by the examiner.

Specification

11. In light of the applicant's respective arguments or respective amendments, the previous drawing objections to the drawings have been withdrawn.

Claim Rejections - 35 USC § 101

12. In light of the applicant's respective arguments or respective amendments, the previous 35 USC § 101 rejections to the claims have been withdrawn.

Claim Rejections - 35 USC § 102

13. In light of the applicant's respective arguments or respective amendments, the previous 35 USC § 102 rejections to the claims have been withdrawn.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 1-4, 10-12, 14-17, 22-26, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,829,600 (Gu et al.) in view of "Nested Transactions with Multiple Commit Points: An approach to the Structuring of Advanced Database Applications" (Walter), further in view of "Introduction to Algebra" (MathLeague).

For **Claim 1**, Gu teaches: "A method comprising:

- identifying statements in a particular one of the transactions that specify modification operations that are commutative and associative; [Gu, col. 1, lines 49-67]
- combining the identified statements into one statement; [Gu, col. 1, lines 30-37] and
- submitting the one statement to the database system" [Gu, col. 1, lines 28-42].
- Gu discloses the above limitations but does not expressly teach:

- "establishing multiple sessions with a database system, each session associated with at least one transaction;
- identifying transactions that operate on the same set of one or more tuples;
- re-allocating transactions between or among the sessions such that the identified transactions that operate on the same set of one or more tuples are allocated to one of the sessions."

With respect to Claim 1, an analogous art, Walter, teaches:

- "establishing multiple sessions with a database system, each session associated with at least one transaction" [Walter, pg. 168, paragraph under C)].

With respect to Claim 1, an analogous art, MathLeague, teaches:

- "identifying transactions that operate on the same set of one or more tuples; [MathLeague, pg. 7, Simplification by Multiplication example with Walter, pg. 168, paragraph under C) with Gu, col. 1, lines 25-37 with Gu, col. 1, lines 49-67]
- re-allocating transactions between or among the sessions such that the identified transactions that operate on the same set of one or more tuples are allocated to one of the sessions" [MathLeague, pg. 7, Simplification by Multiplication example with Walter, pg. 168, paragraph under C) with Gu, col. 1, lines 25-37 with Gu, col. 1, lines 49-67].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Walter and MathLeague with Gu because the inventions are directed towards modifying data within a period of time or a certain time.

Walter's and MathLeague's invention would have been expected to successfully work well with Gu's invention because the inventions use data manipulation operations. Gu discloses a merge delete statement for database operations comprising committing operations and combining statements into one, however Gu does not expressly disclose sessions as broad enough to map to transactions, identifying alike transactions, re-allocating transactions or grouping transactions. Walter discloses nested transactions with multiple commit points comprising committing child transactions upon committing the parent transaction (grouping all child transactions into the parent when the parent commits). MathLeague discloses an introduction to algebra comprising simplifying equations on both sides of the equation to find the value of the variable that satisfies the equation.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the transactions from Walter, the grouping of similar operations on the same group of data from MathLeague and install them into the invention of Gu, thereby offering the obvious advantage of simplifying transactions/sessions on databases of Gu and allowing independent transaction updating of the database.

As mapped, the transactions of Walter are the sessions in the claim. Also, MathLeague, in the cited section, multiplies both sides of an equation by 12 to simplify the equation and solve for the variable. As this prior art is combined with the other arts, the multiplication of 12 on the left hand side of the equation is one transaction while the multiplication of 12 on the right hand side is a second transaction. These transactions are grouped together in Walter as being in the same commit scope so both sides would

be modified on commit, thus solving/simplifying transactions like the cited transaction of Gu.

Claim 2 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 1, wherein identifying the statements comprises identifying Structured Query Language (SQL) statements" [Gu, col. 1, lines 30-37].

Claim 3 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 1, wherein combining the identified statements is performed prior to submitting the one statement to the database system" [Gu, col. 1, lines 30-37 with Gu, cols. 2-3, lines 63-8].

Claim 4 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 1, further comprising grouping plural transactions into the first transaction" [Walter, pg. 168, paragraph under C)].

Claim 10 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 1, wherein identifying the statements comprises identifying statements <t, b_i > through <t, b_m >, m being greater than 1, where t represents a set of one or more tuples, and b_i through b_m represent respective modification operations on the set of one or more tuples, [MathLeague, pg. 7, Simplification by Multiplication example with Gu, col. 1, lines 55-67] and

- wherein combining the identified statements comprises combining the identified statements into statement <t, c>, where c represents an aggregation of b_i through b_m" [MathLeague, pg. 7, Simplification by Multiplication example with Gu, col. 1, lines 55-67].

Claim 11 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 10, wherein combining the identified statements comprises combining the identified statements into statement <t, c>, where c represents an addition of b_i through b_m" [MathLeague, pg. 7, Simplification by Multiplication example with Gu, col. 1, lines 55-67].

Claim 12 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 10, wherein combining the identified statements comprises combining the identified statements into statement <t, c>, where c represents a multiplication of b_i through b_m" [MathLeague, pg. 7, Simplification by Multiplication example with Gu, col. 1, lines 55-67].

Claim 14 encompasses substantially the same scope of the invention as that of Claims 11 or 12 respectfully, in addition to an article and some instructions for performing the method steps of Claims 11 or 12, respectfully. Therefore, Claim 14 is rejected for the same reasons as stated above with respect to Claims 11 or 12, respectfully.

Claims 15-17 encompass substantially the same scope of the invention as that of Claims 2-4 respectfully, in addition to an article and some instructions for performing the method steps of Claims 2-4, respectfully. Therefore, Claims 15-17 are rejected for the same reasons as stated above with respect to Claims 2-4, respectfully.

Claim 22 encompasses substantially the same scope of the invention as that of Claim 1, in addition to a system and some interface, processor(s), and software utility for performing the method steps of Claim 1. Therefore, Claim 22 is rejected for the

same reasons as stated above with respect to Claim 1. Additionally, Claim 22 recites "an interface to receive first queries from a client system," which is taught in Gu, col. 8, lines 52-64 with Gu, Fig. 3, "one or more processors" which is taught in Gu, col. 7, lines 5-10 with Gu, Fig. 3, and "a software utility executable on the one ore more processors to" which is taught in Gu, col. 7, lines 10-15 with Gu, Fig. 3.

Claim 23 encompasses substantially the same scope of the invention as that of Claim 2, in addition to a system and some interface and controller for performing the method steps of Claim 2. Therefore, Claim 23 is rejected for the same reasons as stated above with respect to Claim 2.

Claim 24 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The system of claim 22, wherein the controller is adapted to send the second query to a database engine of the database system" [Gu, col. 1, lines 30-37 with Gu, cols. 2-3, lines 63-8].

Claim 25 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The system of claim 24, wherein the controller is adapted to group the identified first queries prior to submitting the second query to the database engine" [Gu, col. 1, lines 30-37 with Gu, cols. 2-3, lines 63-8].

Claim 26 encompasses substantially the same scope of the invention as that of Claim 4, in addition to a system and some controller for performing the method steps of Claim 4. Therefore, Claim 26 is rejected for the same reasons as stated above with respect to Claim 4.

Claims 28-30 encompass substantially the same scope of the invention as that of Claims 10-12, respectfully, in addition to a system and some interface and controller for performing the method steps of Claims 10-12, respectfully. Therefore, Claims 28-30 are rejected for the same reasons as stated above with respect to Claims 10-12, respectfully.

16. Claims 8, 9, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,829,600 (Gu et al.) in view of "Nested Transactions with Multiple Commit Points: An approach to the Structuring of Advanced Database Applications" (Walter) in view of "Introduction to Algebra" (MathLeague), further in view of "Lesson on Order of Operations With Exponents" (MathGoodies).

For **Claim 8**, Gu (as modified by Walter and MathLeague) teaches: "The method of claim 1, further comprising."

Gu (as modified by Walter and MathLeague) discloses the above limitation but does not expressly teach: "switching an order of statements in the particular transaction to place the identified statements adjacent to each other."

With respect to Claim 8, an analogous art, MathGoodies, teaches: "switching an order of statements in the particular transaction to place the identified statements adjacent to each other" [MathGoodies, pg. 2, Example 3 with Gu, col. 1, lines 55-67].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine MathGoodies with Gu (as modified by Walter and MathLeague) because both inventions are directed towards modifying data using math.

MathGoodies's invention would have been expected to successfully work well with Gu (as modified by Walter and MathLeague)'s invention because both inventions use math to determine an answer. Gu (as modified by Walter and MathLeague) discloses a merge delete statement for database operations comprising an update statement that uses math in updating variables/tuples, however Gu (as modified by Walter and MathLeague) does not expressly disclose reordering statements within transactions. MathGoodies discloses simplifying mathematical equations comprising solving for the answer of a mathematical problem.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the simplification of mathematical equations from MathGoodies and install it into the invention of Gu (as modified by Walter and MathLeague), thereby offering the obvious advantage maintaining coherency when using math in transactions. In this combination, the statements of the claim are the operations of MathGoodies, which are the modification operations of Gu (as modified by Walter and MathLeague). As taught in mathematics, some operations, such as multiplication, are done prior to other operations, such as addition. This is reordering operations/statements.

Claim 9 can be mapped to Gu (as modified by Walter, MathLeague, and MathGoodies) as follows: "The method of claim 8, further comprising determining whether data dependency exists between or among the identified statements prior to switching the order of the identified statements" [MathGoodies, pg. 2, Example 3, the order in which operations are done in math define the dependencies].

Claim 20 encompasses substantially the same scope of the invention as that of Claim 8, in addition to an article and some instructions for performing the method steps of Claim 8. Therefore, Claim 20 is rejected for the same reasons as stated above with respect to Claim 8.

17. Claims 5-7, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,829,600 (Gu et al.) in view of "Nested Transactions with Multiple Commit Points: An approach to the Structuring of Advanced Database Applications" (Walter), further in view of "Introduction to Algebra" (MathLeague), further in view of U.S. Patent No. 6,714,938 (Avadhanam et al.).

For **Claim 5**, Gu (as modified by Walter and MathLeague) teaches: "The method of claim 4."

Gu (as modified by Walter and MathLeague) discloses the above limitation but does not expressly teach: "wherein establishing the multiple sessions, identify the transactions, re-allocating the transaction, identifying the statements, combining the identified statements, submitting the one statement, and grouping the plural transactions are performed by a module separate from a database engine of the database system."

With respect to Claim 5, an analogous art, Avadhanam, teaches: "wherein establishing the multiple sessions, identify the transactions, re-allocating the transaction, identifying the statements, combining the identified statements, submitting the one statement, and grouping the plural transactions are performed by a module

separate from a database engine of the database system" [Avadhanam, col. 7, lines 11-24].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Avadhanam with Gu (as modified by Walter and MathLeague) because both inventions are directed towards using and needing to analyze queries.

Avadhanam's invention would have been expected to successfully work well with Gu (as modified by Walter and MathLeague)'s invention because both inventions use a database issuing queries. Gu (as modified by Walter and MathLeague) discloses a merge delete statement for database operations comprising a database server, however Gu (as modified by Walter and MathLeague) does not expressly disclose that this database server explicitly has a query optimizer that must analyze the query (although this is necessary) or that this optimizer is a separate module from a database engine of the database system. Avadhanam discloses query planning using a maxdiff histogram comprising a query optimizer that analyses queries and is, by definition, separate from a database engine of the database system.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the query optimizer from Avadhanam and install it into the invention of Gu (as modified by Walter and MathLeague), thereby offering the obvious advantage of determining a best execution plan for a submitted query.

For **Claim 6**, Gu teaches: "The method of claim 1."

Gu discloses the above limitation but does not expressly teach: "wherein establishing the multiple sessions, identifying the transactions, re-allocating the

transactions, identifying the statements, combining the identified statements, and submitting the one statement are performed by a module separate from a database engine of the database system."

With respect to Claim 6, an analogous art, Avadhanam, teaches: "wherein establishing the multiple sessions, identifying the transactions, re-allocating the transactions, identifying the statements, combining the identified statements, and submitting the one statement are performed by a module separate from a database engine of the database system" [Avadhanam, col. 7, lines 11-24].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Avadhanam with Gu because both inventions are directed towards using and needing to analyze queries.

Avadhanam's invention would have been expected to successfully work well with Gu's invention because both inventions use database issuing queries. Gu discloses a merge delete statement for database operations comprising a database server, however Gu does not expressly disclose that this database server explicitly has a query optimizer that must analyze the query (although this is necessary) or that this optimizer is a separate module from a database engine of the database system. Avadhanam discloses query planning using a maxdiff histogram comprising a query optimizer that analyses queries and is, by definition, separate from a database engine of the database system.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the query optimizer from Avadhanam and install it into the inventoin of

Gu, thereby offering the obvious advantage of determining a best execution plan for a submitted query.

Claim 7 can be mapped to Gu (as modified by Avadhanam) as follows: "The method of claim 6, wherein identifying the statements, combining the identified statements, and submitting the one statement are performed by the module without first accessing data in relational tables" [Gu, col. 1, lines 30-37 with Gu, cols. 2-3, lines 63-8 with Avadhanam, col. 7, lines 11-24].

For **Claim 18**, Gu (as modified by Walter and MathLeague) teaches: "The article of claim 17."

Gu (as modified by Walter and MathLeague) discloses the above limitation but does not expressly teach: "wherein the controller is separate from a database engine of the database system."

With respect to Claim 18, an analogous art, Avadhanam, teaches: "wherein the controller is separate from a database engine of the database system" [Avadhanam, col. 7, lines 11-24].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Avadhanam with Gu (as modified by Walter and MathLeague) because both inventions are directed towards using and needing to analyze queries.

Avadhanam's invention would have been expected to successfully work well with Gu (as modified by Walter and MathLeague)'s invention because both inventions use a database issuing queries. Gu (as modified by Walter and MathLeague) discloses a merge delete statement for database operations comprising a database server,

however Gu (as modified by Walter and MathLeague) does not expressly disclose that this database server explicitly has a query optimizer that must analyze the query (although this is necessary) or that this optimizer is a separate module from a database engine of the database system. Avadhanam discloses query planning using a maxdiff histogram comprising a query optimizer that analyses queries and is, by definition, separate from a database engine of the database system.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the query optimizer from Avadhanam and install it into the invention of Gu (as modified by Walter and MathLeague), thereby offering the obvious advantage of determining a best execution plan for a submitted query.

Claim 19 can be mapped to Gu (as modified by Walter, MathLeague, and Avadhanam) as follows: "The article of claim 18, wherein the identifying, combining, and submitting are performed by the controller without first accessing data in relational tables stored in the database system" [Gu, col. 1, lines 30-37 with Gu, cols. 2-3, lines 63-8 with Avadhanam, col. 7, lines 11-24].

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brent S. Stace whose telephone number is 571-272-8372 and fax number is 571-273-8372. The examiner can normally be reached on M-F 9am-5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A. Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brent Stace

/BS/

/Cam Y Truong/

Primary Examiner

Cam Y Truong